UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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ART UNIT	PAPER NUMBER
2132	

DATE MAILED: 11/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>22 September 2005</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-11</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-11</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

This office action is in reply to the amendment filed 22 September 2005. Claims

1-11 are pending.

Response to Arguments

With regards to the rejections under 35 USC § 101 and 112, applicant's

argument filed on 22 September 2005 has been fully considered, and is persuasive.

The amendments to claims 1, 6-7, and 9-11 overcome the previous rejections based on

the aforementioned sections. The rejections are therefore rescinded.

With regards to the rejections under 35 USC § 103, Applicant's argument filed on

22 September 2005 has been fully considered, but it is not persuasive.

The first argument by the applicant is in reference to claim 1. The applicant

argued that 3GPP TS 22.228 § 7.3 does not teach a step of communicating a list of

services to which a UE is subscribed in an AV request response message (CM2).

The examiner disagrees with this argument. 3GPP TS 22.228 § 7.3 states that

"The IP multimedia applications shall be able to negotiate their capabilities to identify

and select the available media components," and that "In order to support the user's

preferences for IP multimedia applications, the capability negotiation shall take into

account the information in the user profile wherever applicable." The examiner

interprets the negotiation of capabilities "to identify and select the available media

components" as indicating the transfer of information regarding media services available

to the user, because the list of available services would be directly related to the

available components. Furthermore, in order to "take into account the information in the

user profile," the IMS would have to access the HSS to read the user profile (where

information about subscribed services would be stored). According to 3GPP TS 33.203

§ 6.1.1, the AV-Req-Resp CM2 is the only way for this data to be transferred, as it is the

only connection outbound from the HSS. Therefore, if information about available

media components (and as a result, the available media services) is to be made

available to the UE during capabilities negotiation, information from the user profile are

inherently transmitted in messages CM2, SM4, SM5, and SM6.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over the

3rd Generation Partnership Project (3GPP) Technical Specification 33.203 (TS33.203) in

view of the 3GPP TS22.228.

With regards to claim 1, the 3GPP TS 33.203 teaches a method for registering a UE with an IMS so as to allow the UE to access, over a digital communication system, an IM service to which the UE is subscribed, the method including a step in which an S-CSCF of the IMS sends an AV request message (CM1) to an HSS (See 3GPP TS33.203 §6.1.1). The 3GPP TS33.203 does not teach the method characterized in that it includes a step in which in response to the AV request message (CM1), the HSS provides (31) in a AV request response message (CM2) a field indicating a list of services to which the UE is subscribed along with either information that allows establishing SAs for each such service or information that could be used as keying material or other input for other security mechanisms specific to each service.

The 3GPP TS22.228 teaches a method for IMS that allows a UE to register with IMS for multimedia applications in which one of the connection negotiation messages contains a list of services to which the UE is subscribed. In particular, the 3GPP TS22.228 teaches that "it shall be possible for the capability negotiation to take place at invocation, acceptance, and during an IP multimedia session," and that such capability negotiations would "identify and select the available media components." Since the list of available services is directly dependent on the list of available components, the negotiation of capabilities would be an implicit negotiation of services. Furthermore, "the capability negotiation shall take into account information in the user profile." Information about subscribed services would be a part of the user profile stored in the HSS. (3GPP TS22.228 § 7.3)

It would have been obvious to one of ordinary skill in the art to modify the 3GPP

TS33.203 using the 3GPP TS22.228 by incorporating the list of subscribed IM services

in message CM2 as taught by the 3GPP TS22.228. One would have been motivated to

do so because CM2 is the only connection from the HSS, where the list of subscribed

services is stored, to the S-CSCF, which is actually in contact with the UE, in the IM-

subscriber registration process. Thus, the CM2 message would be necessary for

communicating a list of capabilities during the connection phase.

With regards to claim 2, the 3GPP TS33.203 modified by the 3GPP TS22.228 as

described above teaches the method as in claim 1, further characterized in that in

responding to the AV request response message (CM2), the S-CSCF of the IMS adds

(32) the information included in the AV request response message (CM2) to an

authorization challenge message (SM4) and forwards it to an I-CSCF of the IMS (See

3GPP TS33.203 §6.1.1).

With regards to claim 3, the 3GPP TS33.203 modified by the 3GPP TS22.228 as

described above teaches the method as in claim 2, further characterized in that when

the I-CSCF receives the authorization challenge message (SM4), it forwards (33) it as a

forwarded authorization challenge message (SM5) to a P-CSCF of the IMS, which

parses (34) the forwarded authorization challenge message (SM5), generates SPD

entries and corresponding SAs for both P-CSCF and UE, inserts its SPD entries in its

SPD and corresponding SAs into its SADB, and provides in an updated authorization

challenge message (SM6) for the UE the SPD entries and corresponding SAs (See 3GPP TS33.203 §6.1.1).

With regards to claim 4, the 3GPP TS33.203 modified by the 3GPP TS22.228 as described above teaches the method as in claim 3, further characterized in that after receiving the updated authorization challenge message (SM6), the UE inserts (35) the SPD entries into its SPD and inserts the corresponding SAs into its SADB (See 3GPP TS33.203 §6.1.1).

With regards to claim 5, the 3GPP TS33.203 modified by the 3GPP TS22.228 as described above teaches the method as in claim 4, further characterized in that a register is kept for all services to allocate numbers used to derive keys for each service or part of a service. In 3GPP TS33.203 § B.1, it is taught that there exists a cipher key CK_{IM} for each IM, generated through IMS AKA, and that it is used to generate CK_{IM_in} and CK_{IM_out}. It is implicit that CK_{IM} is being stored somewhere, so keeping a register for the CK for each subscribed IM is necessary.

With regards to claim 6, the 3GPP TS33.203 modified by the 3GPP TS22.228 as described above teaches the method as in claim 5, further characterized in that the keys are an integrity key and a cipher key and are derived by applying a mapping to an argument including the number allocated to the respective service or part of a service by the register being kept. In 3GPP TS33.203 § B.2, it is taught that there exists an

integrity key IK_{IM} for each IM, generated through IMS AKA, and that it is used to generate IK_{IM_in} and IK_{IM_out}, and that they are derived using two unidirectional SAs based on the IK associated with the specific IM.

With regards to claim 7, the 3GPP TS33.203 teaches a method for registering a UE with an IMS so as to allow the UE to access, over a digital communication system, an IM service to which the UE is subscribed, the method including a step in which a P-CSCF of the IMS communicates to the UE an authorization challenge message (SM6) (See 3GPP TS33.203 §6.1.1). The 3GPP TS33.203 does not teach that SM6 is characterized in that the authorization challenge message (SM6) includes at least one SPD entry and a corresponding SA derived by the P-CSCF from information provided to the P-CSCF indicating services to which the UE is subscribed along with either information that allows establishing SAs for each such service or information that could be used as keying material or other input for other security mechanisms specific to each service, and the UE inserts (35) the at least one SPD entry into its SPD and the corresponding SA into its SADB, so that for a predetermined time any traffic between the UE and the P-CSCF is secure for the substantially all services to which the UE is subscribed.

The 3GPP TS22.228 teaches a method for IMS that allows a UE to register with IMS for multimedia applications in which one of the connection negotiation messages contains a list of services to which the UE is subscribed. In particular, the 3GPP

TS22.228 teaches that "it shall be possible for the capability negotiation to take place at invocation, acceptance, and during an IP multimedia session," and that such capability negotiations would "identify and select the available media components." Since the list of available services is directly dependent on the list of available components, the negotiation of capabilities would be an implicit negotiation of services. Furthermore, "the capability negotiation shall take into account information in the user profile." Information about subscribed services would be a part of the user profile stored in the HSS. (3GPP TS22.228 § 7.3) Since SM6 is a part of the connection phase, it is implicit that SM6 would have to carry security information relative to the list of subscribed services from the P-CSCF to the UE.

It would have been obvious to one of ordinary skill in the art to modify the 3GPP TS33.203 using the 3GPP TS22.228 by incorporating the security information relative to the list of subscribed services in SM6, as taught by the 3GPP TS22.228. One would have been motivated to do so because SM6 is the only connection from the IMS to the UE in the IM-subscriber registration process. Thus, the SM6 message would be necessary for communicating security information relative to a list of capabilities during the connection phase. Inserting the transmitted security information (SAs and SPD entries) into the security databases (SADB, SPD) is an obvious step because the whole reason they exist is to store security information about the subscribed IMS services.

With regards to claim 8, the 3GPP TS33.203 modified by the 3GPP TS22.228 as described above teaches the method as in claim 7, further characterized in that a register is kept for all services to allocate numbers used to derive keys for each service or part of a service. In 3GPP TS33.203 § B.1, it is taught that there exists a cipher key CK_{IM} for each IM, generated through IMS AKA, and that it is used to generate CK_{IM_in} and CK_{IM_out}. It is implicit that CK_{IM} is being stored somewhere, so keeping a register for the CK for each subscribed IM is necessary.

With regards to claim 9, the 3GPP TS33.203 modified by the 3GPP TS22.228 as described above teaches the method as in claim 8, further characterized in that the keys are an integrity key and a cipher key and are derived by applying a mapping to an argument including the number allocated to the respective service or part of a service by the register being kept. In 3GPP TS33.203 § B.2, it is taught that there exists an integrity key IK_{IM} for each IM, generated through IMS AKA, and that it is used to generate IK_{IM_in} and IK_{IM_out}, and that they are derived using two unidirectional SAs based on the IK associated with the specific IM.

With regards to claim 10, the 3GPP TS33.203 teaches a UE, comprising: means for receiving an authorization challenge message (SM6) from a P-CSCF of an IMS (3GPP TS33.203 § 6.1.1). The 3GPP TS33.203 does not teach that SM6 is characterized in that the authorization challenge message (SM6) includes at least one SPD entry and a corresponding SA derived by the P-CSCF from information provided to

the P-CSCF indicating services to which the UE is subscribed along with either information that allows establishing SAs for each such service or information that could be used as keying material or other input for other security mechanisms specific to each service, and means (35) for inserting the at least one SPD entry into its SPD and the corresponding SA into its SADB, so that for a predetermined time any traffic between the UE and the P-CSCF is secure for the services to which the UE is subscribed.

The 3GPP TS22.228 teaches a method for IMS that allows a UE to register with IMS for multimedia applications in which one of the connection negotiation messages contains a list of services to which the UE is subscribed. In particular, the 3GPP TS22.228 teaches that "it shall be possible for the capability negotiation to take place at invocation, acceptance, and during an IP multimedia session," and that such capability negotiations would "identify and select the available media components." Since the list of available services is directly dependent on the list of available components, the negotiation of capabilities would be an implicit negotiation of services. Furthermore, "the capability negotiation shall take into account information in the user profile." Information about subscribed services would be a part of the user profile stored in the HSS. (3GPP TS22.228 § 7.3) Since SM6 is a part of the connection phase, it is implicit that SM6 would have to carry security information relative to the list of subscribed services from the P-CSCF to the UE.

It would have been obvious to one of ordinary skill in the art to modify the 3GPP

TS33.203 using the 3GPP TS22.228 by incorporating the security information relative to

the list of subscribed services in SM6, as taught by the 3GPP TS22.228. One would

have been motivated to do so because SM6 is the only connection from the IMS to the

UE in the IM-subscriber registration process. Thus, the SM6 message would be

necessary for communicating security information relative to a list of capabilities during

the connection phase. Inserting the transmitted security information (SAs and SPD

entries) into the security databases (SADB, SPD) is an obvious step because the whole

reason they exist is to store security information about the subscribed IMS services.

With regards to claim 11, the 3GPP TS33.203 teaches a digital communication

system comprising an IMS having an S-CSCF and an HSS, wherein the S-CSCF

includes means for sending an AV request message (CM1) to the HSS (see 3GPP

TS33.203 § 6.1.1). The 3GPP TS 33.203 does not teach a digital communication

system in which the HSS includes means for providing, in response to the AV request

message (CM1), a AV request response message (CM2) including a field indicating a

list of services to which a UE is subscribed along with either information that allows

establishing SAs for each such service or information that could be used as keying

material or other input for other security mechanisms specific to each service.

The 3GPP TS22.228 teaches a method for IMS that allows a UE to register with

IMS for multimedia applications in which one of the connection negotiation messages

contains a list of services to which the UE is subscribed. In particular, the 3GPP

TS22.228 teaches that "it shall be possible for the capability negotiation to take place at invocation, acceptance, and during an IP multimedia session," and that such capability negotiations would "identify and select the available media components." Since the list of available services is directly dependent on the list of available components, the negotiation of capabilities would be an implicit negotiation of services. Furthermore, "the capability negotiation shall take into account information in the user profile." Information about subscribed services would be a part of the user profile stored in the HSS. (3GPP TS22.228 § 7.3)

It would have been obvious to one of ordinary skill in the art to modify the 3GPP TS33.203 using the 3GPP TS22.228 by incorporating the list of subscribed IM services in message CM2 as taught by the 3GPP TS22.228. One would have been motivated to do so because CM2 is the only connection from the HSS, where the list of subscribed services is stored, to the S-CSCF, which is actually in contact with the UE, in the IM-subscriber registration process. Thus, the CM2 message would be necessary for communicating a list of capabilities during the connection phase.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Virgil Herring whose telephone number is (571) 272-

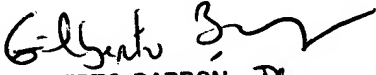8189. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Gilberto Barron can be reached on (571) 272-3799. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Virgil Herring
Examiner
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